## I. In the Claims (Clean Sheet)

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- 23. A nucleic acid sequence encoding a 15 kD Babesia canis associated protein or an immunogenic fragment of said protein, said protein or immunogenic fragment thereof having at least 80% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- .14. The nucleic acid sequence of Claim 23 having at least 90% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 25. The nucleic acid sequence of Claim 23 having at least 95% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 26. A cDNA comprising a nucleic acid sequence according to Claim 23.
  - 27. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.
- 18. A resumblinant INA molecule amprising a SUA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked premoter.
- 2.4. A live remaining to rarrier comprision a WMA control of the control of th

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nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

- A host cell comprising a sequence selected from the 31. group consisting of a nucleic acid sequence according to Claim 23; a cDNA fragment comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.
- 32. A Babesia canis associated protein, said protein having a molecular weight of 15 kD and comprising an amino acid sequence that is at least + 1 homologous to the amino axid sequence as legitted in CE, II M: ... that immunigenize transport of said protein.

- 34. The Babesia canis associated protein of claim 32 wherein the amino acid sequence is at least 90° homologous to the amino acid sequence as depicted in SEQ ID NO: 1, or an immunogenic fragment of said protein.
- 35. The Babesia canis associated protein of claim 32 wherein the amino acid sequence is at least 95 homologous to the amino acid sequence as depicted in SEQ ID NO: 2, or an immunogenic fragment of said protein.
- 36. A vaccine for combating Babesia canis infections, comprising an immunogen selected from the group consisting of a nucleic acid sequence according to Claim 23; a cDNA comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 23 and a number of desegree to a territor to their 03, under the control of a functionally linked premoter; and, a host cell comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 13, a dilla trasment o mprising a nuclei cari i sequence and the second of the second o

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under the control of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 25 and a cDNA comprising a nucleic acid sequence according to Claim 25, under the control of a functionally linked promoter.

- 37. The vaccine of claim 36 further comprising an adjuvant.
- 38. The vaccine of claim 36 further comprising an additional antigen derived from a virus or microorganism pathogenic to dogs or a nucleic acid sequence encoding said antigen.
- 39. The vaccine according to claim 38, wherein said virus or micro-organism pathogenic to dogs is selected from the group of Ehrlichia canis, Babesia gibsoni, vogeli, rossi, Leishmania donovani-complex, Canine parvovirus, Canine distempervirus, Leptospira interrogans serovar canicola, icterohaemorrhagiae, pomona, grippotyphosa, bratislava, Canine nepatitisvirus, Canine parainfluencavirus, rabies virus, Hepatogogo canis and Borrelia burgiorteri.
- 40. A vaccine for combating Babesia canis infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of claims

- 41. A diagnostic test for the detection of Babesia canis associated RNA wherein the test comprises a nucleic acid sequence according to Claim 23, a nucleotide sequence that is complementary to said nucleic acid sequence, and a fragment thereof having a length of at least 12 nucleotides.
- 42. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as defined in claims 32-35.
- 43. A diagnostic test for the detection of *Babesia canis* associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 32-35.
- 44. A nucleic acid sequence encoding a 32 kD Babesia canis associated protein or an immunogenic fragment of said protein, said protein or immunogenic fragment thereof having at least 80% homology with the amino acid sequence as depicted in SEQ ID NO:4.
- 46. The number and sequence is drain 44 having at least 90% homel gy with the amine acid segmence as depicted in SEQ ID NO:4.
- 40. The nuclei carii sequence of Claim 44 having at least

- 47. A cDNA comprising a nucleic acid sequence according to Claim 44.
- 48. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
- 49. A recombinant DNA molecule comprising a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
- 50. A live recombinant carrier comprising a cDNA comprising a nucleic acid sequence according to Claim 44.
- 51. A live recombinant carrier comprising a recombinant DNA molecule selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
- 52. A host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to claim 44; a cPNA fragment comprising a nucleic acid sequence according to Claim 44; a recombinant CNA molecule comprising a requence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, ander the control of a functionally linked promoter; and, a

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acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

- 53. A Babesia canis associated protein, said protein having a molecular weight of 32 kD and comprising an amino acid sequence that is at least 36 homologous to the amino acid sequence as depicted in SEQ ID NO:4 or an immunogenic fragment of said protein.
- 54. The Babesia canis associated protein of claim 53 wherein the amino acid sequence is at least 65% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.
- 55. The Babesia canis associated protein of claim E3 wherein the amino acid sequence is at least 90% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.
- 56. The Babesia canis associated protein of claim 53 wherein the amino acid sequence is at least 95% homologous to the amino acid sequence as depicted in SEQ IP NO: 4, or an immunogenic transment of said protein.
- 57. A vaccine for combating *Babesia canis* infections, comprising an immunegen selected from the group consisting of a nucleir acid sequence according to the Main 44; a cDNA

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nucleic acid according to Claim 44, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 44 and a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter; and, a host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to Claim 44, a cDNA fragment comprising a nucleic acid sequence according to Claim 44, a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the central of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

- is. The variable foliam for further comprising an adjuvant.
- 69. The was sine of slaim 57 further comprising an

- or micro-organism pathogenic to dogs is selected from the group of Ehrlichia canis, Babesia gibsoni, vogeli, rossi, Leishmania donovani-complex, Canine parvovirus, Canine distempervirus, Leptospira interrogans serovar canicola, icterohaemorrhagiae, pomona, grippotyphosa, bratislava, Canine hepatitisvirus, Canine parainfluenzavirus, rabies virus, Hepatozoon canis and Borrelia burgdorferi.
- 61. A vaccine for combating Babesia canis infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of Claims 53-56, or immunogenic fragment thereof.
- 62. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as defined in claims 52-55
- 63. A diagnostic test for the detection of *Babesia canis* associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 50-15.

## II. In the Claims (Marked Version)

Please cancel claims 1-22 without prejudice or disclaimer. Applicants are canceling claims 1-22 to present the identical claims in a proper form for U.S. examination

Please insert the following claims:

- - 23. A nucleic acid sequence encoding a 15 kD Babesia canis associated protein or an immunogenic fragment of said protein, said protein or immunogenic fragment thereof having at least 80% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 24. The nucleic acid sequence of Claim 23 having at least 90% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 25. The nucleic acid sequence of Claim 23 having at least 95% homology with the amino acid sequence as depicted in SEQ ID NO:2.
- 26. A dENA comprising a nucleic acid sequence according to claim 23.
- 27. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

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- 29. A live recombinant carrier comprising a cDNA comprising a nucleic acid sequence according to Claim 23.
- 30. A live recombinant carrier comprising a recombinant DNA molecule selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.
- A host cell comprising a sequence selected from the 31. group consisting of a nucleic acid sequence according to Claim 23; a cDNA fragment comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the droup consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 2:, under the control of a functionally linked promoter; and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Olaim DF and a cPMA comprising a nucleing it sequence and rding to Maim In, under the dentrol of a functionally linked promotor.
- 32. A Babesia canis associated protein, said protein maving a molecular weight of 15 kg and omprising an amino

- 33. The *Babesia canis* associated protein of claim 32 wherein the amino acid sequence is at least 85% homologous to the amino acid sequence as depicted in SEQ IF NO: 2, or an immunogenic fragment of said protein.
- 34. The Fabesia canis associated protein of claim 32 wherein the amino acid sequence is at least 90% homologous to the amino acid sequence as depicted in SEQ ID NO: 2, or an immunogenic fragment of said protein.
- 35. The Babesia canis associated protein of claim 32 wherein the amino acid sequence is at least 95% homologous to the amino acid sequence as depicted in SEQ ID NO: 2, or an immunogenic fragment of said protein.
- of a nucleic acid sequence according to Claim 23; a cDNA comprising an immunogen selected from the group consisting of a nucleic acid sequence according to Claim 23; a cDNA comprising a nucleic acid sequence according to Claim 23; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 23 and a purious acid sequence

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nucleic acid sequence according to Claim 23, a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 23 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 23 and a cDNA comprising a nucleic acid sequence according to Claim 23, under the control of a functionally linked promoter.

- 37. The vaccine of claim 36 further comprising an adjuvant.
- 38. The vaccine of claim 36 further comprising an additional antigen derived from a virus or microorganism pathogenic to dogs or a nucleic acid sequence encoding said antigen.
- 39. The vactime according to claim 34, wherein said virus of micro- transmip athogenists it as is solected in mother group of Ehrlichia comis, Babesia aibsoni, voqeli, rossi, Leishmania donovani-complex, Canine parvovirus, Canine distempervirus, Leptospira interrogans serovar canicola, ictorohaemorrhagiae, pomona, arippotyphosa, brutislava,

40. A vaccine for combating *Pabesia canis* infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of claims 32-35, or immunogenic fragment thereof.

41. A diagnostic test for the detection of *Pabesia canis* associated RNA wherein the test comprises a nucleic acid

42. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as defined in claims 32-35.

sequence according to Claim 23, a nucleotide sequence that

fragment thereof having a length of at least 12 nucleotides.

is complementary to said nucleic acid sequence, and a

- 43. A diagnostic test for the detection of *Eabesia vanis* associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 32-35.
- 44. A nucleic acid sequence encoding a 32 kD Babesia canis associated protein or an immunogenia fragment of said protein, said protein or immunogenia transment thereof having at least 80 homology with the amino axii sequence as depicted in SEQ ID NO:4.
- 45. The nucleic acid sequence of Claim 44 having at least

- 46. The nucleic acid sequence of Claim 44 having at least 95% homology with the amino acid sequence as depicted in SEQ ID NO:4.
- 47. A cENA comprising a nucleic acid sequence according to Claim 44.
- 48. A recombinant DNA molecule comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
- 49. A recombinant DNA molecule comprising a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.
- 50. A live recombinant carrier comprising a cDNA comprising a nucleic acid sequence according to Claim 44.
- 51. A live recombinant carrier comprising a recombinant DNA molecule selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the central of a functionally linker process.
- A host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to Claim 44; a cDNA fragment comprising a nucleic acid sequence according to the comprising and the comprising according to the comprising according to the comprising the c

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recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter.

- 53. A Babesia canis associated protein, said protein having a molecular weight of 32 kD and comprising an amino acid sequence that is at least 80% homologous to the amino acid sequence as depicted in SEQ ID NO:4 or an immunogenic fragment of said protein.
- 54. The *Babesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 35% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunogenic fragment of said protein.
- 55. The *Eabesia canis* associated protein of claim 53 wherein the amino acid sequence is at least 90% homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immunigenit fragment of said protein.
- SV. The Puberia camin associated protein of claim 53 wherein the amino acid sequence is at least 35 homologous to the amino acid sequence as depicted in SEQ ID NO: 4, or an immun denic iransent of sail protein.

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fragment comprising a nucleic acid sequence according to Claim 44; a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid according to Claim 44, under the control of a functionally linked promoter; a live recombinant carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule selected from the group consisting of a cDNA comprising a nucleic acid sequence according to Claim 44 and a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter; and, a host cell comprising sequence selected from the group consisting of a nucleic acid sequence according to Claim 44, a cDNA fragment comprising a nucleic acid sequence according to Claim 44, a recombinant DNA molecule comprising a sequence selected from the group consisting of a nucleic acid sequence according to Claim 44 and a cDNA comprising a nucleic acid sequence according to Claim 44, under the control of a functionally linked promoter, and, a live recombinant carrier comprising a carrier selected from the group consisting of a nucleic acid sequence according to Claim 44 and a recombinant DNA molecule comprising a sequence selected from the group consisting of a sucheic actid segmente and miles to Daim 44. and a CDMA comprising a number addit sequence according to Claim 44, under the control of a functionally linked promoter.

- 59. The vaccine of claim 57 further comprising an additional antigen derived from a virus or microorganism pathogenic to dogs or a nucleic acid sequence encoding said antigen.

  60. The vaccine according to claim 59, whereir said virus
- or micro-organism pathogenic to dogs is selected from the group of Ehrlichia canis, Babesia gibsoni, vogeli, rossi, Leishmania donovani-complex, Canine parvovirus, Canine distempervirus, Leptospira interrogans serovar canicola, icterohaemorrhagiae, pomona, grippotyphosa, bratislava, Canine hepatitisvirus, Canine parainfluenzavirus, rabies virus, Hepatozoon canis and Borrelia burgdorferi.
- 61. A vaccine for combating Babesia can's infections, comprising antibodies against a protein selected from the group consisting of at least one of the proteins of Claims 53-56, or immunogenic fragment thereof.
- 62. A diagnostic test for the detection of antibodies against *Babesia canis* associated antigenic material, wherein said test comprises a protein or an immunogenic fragment thereof as is fixed in claims 52-55
- associated antigenic material, wherein said test comprises antibodies against a protein or an immunogenic fragment thereof as defined in claims 5...-11. -

New claims 23-63 are original claims 1-22 re-written in a format proper for U.S. examination. The amendments made were not based on reasons related to patentability under 35 U.S.C. §§ USC 101, 102, 103 and/or 112. No estoppel should result from said amendments.